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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,149	09/19/2003	James M. Nelson	BING-1-1040	8217

25315 7590 02/02/2006

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EXAMINER

BROOME, SAID A

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/666,149	NELSON, JAMES M.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Said Broome	2671	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*fy*

## DETAILED ACTION

### *Response to Amendment*

1. This office action is in response to an amendment filed 11/25/2005.
2. Claims 1 and 8 have been amended by the applicant.
3. Claims 2-7 and 9-41 are original.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 7-10, 13-17, 20-24, 27-31, 34-48 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Kacyra et al. (US Patent 6,619,406).

Kacyra et al. describes what is disclosed in claims 1, 9, 15, 23, 29 and 37 in column 1 lines 66-67 and column 2 lines 1-5 where it is stated that several points are gathered to generate a model of an object within an area of interest. Kacyra et al. also describes in column 3 lines 3-6 that gathered points that are identified to have similarities to particular object. The volume and surface data of the objects are then generated using the collected points for that object, as described in column 2 lines 32 –34, which is equivalent to the generation of an isosurface.

Kacyra et al. describes the generation of the reversed orientation visualization model in column 3

lines 3-6 as an obtained group of points that corresponds and identifies with a particular object of interest within an area. It is therefore possible to also generate only the points that comprise the object, which would result in the exclusion of obscurities. The limitation of claim 9, which describes the selection of a region of interest for observation, is illustrated by element 514 of Figure 5 and is also described in column 7 lines 50-52.

Kacyra et al. explains gathering point data over an area of land in which their position is defined by elevation measures which supports the detection of points from an aerial position in column 2 lines 34-40, which is disclosed in claims 2, 9, 16, 23, 30, and 37. Kacyra et al. also describes the limitations of claims 3, 10, 17, 24, 31, and 38 in column 1 lines 12-14, where it is stated that the three dimensional imaging data of the scene obtained using a 3D lidar system which is equivalent to a ladar system, and is also illustrated as element 412 in Figure 4.

Kacrya et al. describes what is disclosed in claims 6, 13, 20, 27, and 34 in column 7 lines 46-51, where it is stated that regions of interest are selected which are then used to generate images using the collected data points, one of which can be used for generating a reversed image excluding any obstructions by generating only the points comprising the object of interest.

The limitations of claims 7, 21, 28 and 35 are described by Kacyra et al. in column 3 lines 9-11 where it is described that obtained points are used to generate models which contain several features relating to objects of interest over a particular land area that may be referenced or extracted, as described in column 3 lines 11-14, which can then be used to either produce a model of all objects that comprise the surfaces encompassing the area of terrain under analysis equivalent to a top down visualization, or a specific group of points corresponding to a captured

object of interest excluding all obscurations would also be illustrated using a visual representation which would present a view from the ground level up.

Kacyra et al. describes what is disclosed in claims 8, 14, 22, 28, 36 and 41 in column 2 lines 34-38 where it is stated that the a group of points are obtained over a tract or area of land to define a model over a particular surface. The generated model is described to have referencing capabilities in column 3 lines 11-14. Therefore total ground occlusion, which displays the object in the absence of obstruction, would be achieved by referencing only those captured points that define the object of interest.

It is also evident from the teachings of Kacyra et al. that the method for detection of an object from an aerial position in a three dimensional point cloud representing an area where the object may be obscured, as described in the preamble of claims 1 and 9, is described in column 1 lines 11-14 and column 3 lines 1-6, where the detection of an object using a laser is used to gather points that are compared to identified objects, which enables independent generation thereby excluding obscurations. A system and computer readable medium for storing the model and other data pertaining to the object of interest, is explained in column 9 lines 6-22, which is also implied to comprise stored instructions, image processing and a laser detection apparatus for facilitating the detection of the model as well, as described in the preamble of claims 15, 23, 29 and 37.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 11, 12, 18, 19, 25, 26, 32, 33, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacrya et al. in view of Foley et al., in further view of Valle et al.

Kacrya et al. teaches what is disclosed in claims 4, 5, 11, 12, 18, 19, 25, 26, 32, 33, 39 and 40 except the method of computing a mesh using a fast binning method and the computation of the isosurface of the object using a marching cubes method. Foley et al. teaches generating an isosurface using a marching cubes method on page 1048. The method of generating a mesh using a binning method is known in the art, and is described by Valle et al. on page 1 in lines 1-2 of the synopsis section, and lines 1-5 of the description section. It would have been obvious to one of ordinary skill in the art to combine the teachings of Kacrya et al. and combine them with the marching cube method of Foley et al. and the binning method of Valle et al. because both methods improve the generation of the surfaces of the mesh data from an obtained group of data points to display 3D views of areas of interest that may contain areas of occlusion.

### ***Response to Arguments***

Applicant's arguments filed 11/25/2005 have been fully considered but they are not persuasive.

The applicant argues that the reference Kacrya et al. used in the 35 U.S.C. 102(e) rejection of claims 1-3, 6, 7-10, 13-17, 20-24, 27-31, 34-48 and 41 does not teach generating an

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isosurface. The examiner maintains the rejection because Kacyra et al. teaches gathering a cloud of points used to generate 3-D data and surfaces, as described in column 9 lines 24-29, that are designated and modified by a user, as described in column 4 lines 3-8, therefore it would have been possible to generate a continuous 3-D surface or isosurface to one of ordinary skill in the art using the gathered 3-D point cloud data through modifying the data to generate an isosurface, or any other continuous surface, of interest. The applicant also argues that the reference Kacyra et al. does not teach generating a reverse orientation visualization model for a region of interest. The examiner maintains the rejection because Kacyra et al. teaches an obtained group of points that correspond and identify with a particular object of interest within an area in column 3 lines 3-6. Therefore, it would also be possible to generate only the points that comprise the object, resulting in the exclusion of obscurities.

The applicant argues that the reference Kacyra et al. in view of Foley et al., in further view of Valle et al. used in the 35 U.S.C. 103(a) rejection of claims 4, 5, 11, 12, 18, 19, 25, 26, 32, 33, 39 and 40 does not teach the use of isosurfaces for generating reverse orientation visualization models. The examiner maintains the rejection because the isosurface generation method of Foley et al. and the fast binning method of Valle et al. are both methods known in the art and are viewed in combination of Kacyra et al. Therefore one of ordinary skill in the art would be capable of utilizing those methods to provide a system or method of gathering a cloud of three dimensional point data to generate and modify a three dimensional surface in order to display 3D observations of particular regions or objects of interest thereby excluding any obstructions or occlusions.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR




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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Broome  
1/26/06

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